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P. 018

In re: Mahajan et al..
Appl. No. 09/954,950
Filed September 18, 2001

APPENDIX TAB 1

FileUp - MLH1 & MutL sequences
March 9, 2004

Symbol comparison table: blosum62.cmp CompCheck: 1102
GapWeight: 8 GapLengthWeight: 2

1285AJ012747_fileup_113732.txt MSF: 861 Type: P March 9, 2004 15:49
Check: 3903 ..

U07343aa Protein encoded by GenBank U07343, human
U80054aa Protein encoded by GenBank U80054, Rat
AJ012747aa Protein encoded by GenBank AJ012747, A. thaliana
1285sid2 SEQ ID NO: 2, Rice
U07187aa Protein encoded by GenBank U07187, S. cerevisiae
P23367 SwissProt MutL, E. coli

FORMATTING:

Residues identical to 1285sid2

Residues conserved to 1285sid2 (A, S, & T; M, I, L, & V; D & E; Q & N; P, Y, & W; and K & R. See, Creighton (1984) Proteins W.H. Freeman & Company)

Residues similar to 1285sid2, alternate conservative groups (A, S, T, P, & G; M, I, L, & V; D, E, Q, & N; K, R, & H; and Y, F, & W. As used in McKay et al. Genomics 36:305-315 1996))

MutL/PMG1 Signature Sequence Underlined Bold (see Figure 2)

Pfam domain DNA-mis-repair Double-underlined Bold (Exhibit A, 5/19/03)

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1                                     50
1285U07343aa ----- -M-EVAGVIR-RL-E-VVNR-AAGEVIQRP
1285U80054aa ----- -M-EVAGVIR-RL-E-VVNR-AAGEVIQRP
1285AJ012747 MTDSSLTAE MR-ESPATT IVPRFP-IQ RLERSVVNR-AAGEVIQRP
1285sid2 ----- -M-ESPRGG GC-ESPRIR-RLERSVVNR-AAGEVIQRP
1285U07187aa ----- -MSLR- AL-ESVVN-AAGELSRV
1285P23367 ----- -MP-IQ VLDPQ-ESRL-AAGEVIQRP

51                                     100
1285U07343aa NA-KEIRNC IDAK-ESQV IVK-ESGLKL-ESQDNGTQIR IQPY-ESIR
1285U80054aa NA-KEIRNC IDAK-ESQV IVK-ESGLKL-ESQDNGTQIR KQPL-ESIR
1285AJ012747 SAVKEL-ESNS IDAP-ESSV VVKDGLKL-ESQVDDQHGR REDLFI-ESIR
1285sid2 SAVKEL-ESNS IDAP-ESSV AVKDGLKL-ESQVDDQHGR REDLFI-ESIR
1285U07187aa NA-KEIRNS IDAN-ESQV IVK-ESGLKL-ESQDNGSQIR KADPFI-ESIR
1285P23367 SAVKEL-ESNS IDAP-ESSV AVKDGLKL-ESQVDDQHGR KADPFI-ESIR

101                                     150
1285U07343aa HTTSKLO-ES PL-ESYGF RQALAS-ES VHVT-ESTKT ADGKCAV-ESIR
1285U80054aa HTTSKLO-ES PL-ESYGF RQALAS-ES VHVT-ESTKT ADGKCAV-ESIR
1285AJ012747 HTTSKLO-ES PL-ESYGF RQALAS-ES VHVT-ESTKT KQ-ESIR
1285sid2 HTTSKLO-ES PL-ESYGF RQALAS-ES VHVT-ESTKT KQ-ESIR
1285U07187aa HTTSKLO-ES PL-ESYGF RQALAS-ES VHVT-ESTKT KQ-ESIR
1285P23367 HTTSKLO-ES PL-ESYGF RQALAS-ES VHVT-ESTKT KQ-ESIR

151                                     200
1285U07343aa YSPGK-ES KAP PKPCAGNQG-ES IVEDLPYN-ES RKK-ESIR
1285U80054aa YSPGK-ES KAP PKPCAGNQG-ES IVEDLPYN-ES RKK-ESIR
1285AJ012747 YRNGV-ES MRHB PKACAAVKG-ES IVENLPYN-ES RKK-ESIR
1285sid2 YRNGV-ES MRHB PKPCAAVKG-ES IVENLPYN-ES RKK-ESIR
1285U07187aa YRNGV-ES MRHB PKPCAAVKG-ES IVENLPYN-ES RKK-ESIR
1285P23367 YRNGV-ES MRHB PKPCAAVKG-ES IVENLPYN-ES RKK-ESIR
```

MutL/PMG1
Signature
Sequence

201 250
1285U07343aa VGRVHNA GRSV KQG RTVADVR LP NSTD NERS GN VSR
1285U00054aa VGRVHNS GRSV KQG RTVADVR LP NSTD NERS GN VSR
1285AJ012747 LSRMAHYN NVTSCKKHG AVNVHVVV PRRD PR SVYGVAVAN
1285aid2 PTERAVHNI NVTSCKKHG ANADVHAS PRRD PR SVYGVAVAN Pfam DNA
1285U07187aa VGRVHNS GRSV KQG RTVADVR LP NSTD NERS GN VSR Pfam repair
1285P23367 LSRMAHYN NVTSCKKHG AVNVHVVV PRRD PR SVYGVAVAN

251 300
1285U07343aa LTR...QC DKTLPKMG YLNANYSVK KCI F LTR NRRV ST
1285U00054aa LTR...QC DKTLPKMG YLNANYSVK KCI F LTR NRRV ST
1285AJ012747 LK...EVESCD GCTPDM G TAN NYVAK KCI LTR NRRV ST
1285aid2 LTR...EVESCD GCTPDM G TAN NYVAK KCI LTR NRRV ST Pfam DNA
1285U07187aa LTR...EVESCD GCTPDM G TAN NYVAK KCI LTR NRRV ST Pfam repair
1285P23367 LTR...EVESCD GCTPDM G TAN NYVAK KCI LTR NRRV ST

301 350
1285U07343aa KATET...A YLPKN HPF Y...E SPON VGVN HPEKH NVHF...
1285U00054aa KATET...A YLPKN HPF Y...E SPON VGVN HPEKH NVHF...
1285AJ012747 KATET...A YLPKN HPF Y...E SPON VGVN HPEKH NVHF...
1285aid2 KATET...A YLPKN HPF Y...E SPON VGVN HPEKH NVHF... Pfam DNA
1285U07187aa KATET...A YLPKN HPF Y...E SPON VGVN HPEKH NVHF... Pfam repair
1285P23367 KATET...A YLPKN HPF Y...E SPON VGVN HPEKH NVHF...

351 400
1285U07343aa HE...EST R RQCHIRSKI GEN... R PTO... LPP AGPSG
1285U00054aa HE...EST R RQCHIRSKI GEN... R PTO... LPP AGPSG
1285AJ012747 HQ...EST R RQCHIRSKI GEN... R PTO... LPP AGPSG
1285aid2 HQ...EST R RQCHIRSKI GEN... R PTO... LPP AGPSG Pfam DNA
1285U07187aa HQ...EST R RQCHIRSKI GEN... R PTO... LPP AGPSG Pfam repair
1285P23367 HQ...EST R RQCHIRSKI GEN... R PTO... LPP AGPSG

401 450
1285U07343aa RMVKSTSL BSS SG..SG DKYAH... QMVRT SR..EQ..
1285U00054aa RMVKSTSL BSS SG..SG DKYAH... QMVRT SR..EQ..
1285AJ012747 Q...KSDSPV QKPEQQ..K DKRVN... QMVRT SR..EQ..
1285aid2 Q...KSDSPV QKPEQQ..K DKRVN... QMVRT SR..EQ.. Pfam DNA
1285U07187aa Q...KSDSPV QKPEQQ..K DKRVN... QMVRT SR..EQ.. Pfam repair
1285P23367 Q...KSDSPV QKPEQQ..K DKRVN... QMVRT SR..EQ..

451 500
1285U07343aa D...LQPLSKP LSSQPQIVT EDKTDISSGR ARQDDEEMLE LPAPAE...V
1285U00054aa D...LQPLSKP LSSQPQIVT EDKTDISSGR ARQDDEEMLE LPAPAE...V
1285AJ012747 D...LQPLSKP LSSQPQIVT EDKTDISSGR ARQDDEEMLE LPAPAE...V
1285aid2 D...LQPLSKP LSSQPQIVT EDKTDISSGR ARQDDEEMLE LPAPAE...V
1285U07187aa D...LQPLSKP LSSQPQIVT EDKTDISSGR ARQDDEEMLE LPAPAE...V
1285P23367 D...LQPLSKP LSSQPQIVT EDKTDISSGR ARQDDEEMLE LPAPAE...V

501 550
1285U07343aa AAKNQLSGD TTKGTSE MS BKRGPIS SN PR RH DSP VEMVEDDSRK
1285U00054aa AAKNQLSGD TTKGTSE MS BKRGPIS SN PR RH DSP VEMVEDDSRK
1285AJ012747 AAKNQLSGD TTKGTSE MS BKRGPIS SN PR RH DSP VEMVEDDSRK
1285aid2 AAKNQLSGD TTKGTSE MS BKRGPIS SN PR RH DSP VEMVEDDSRK
1285U07187aa AAKNQLSGD TTKGTSE MS BKRGPIS SN PR RH DSP VEMVEDDSRK
1285P23367 AAKNQLSGD TTKGTSE MS BKRGPIS SN PR RH DSP VEMVEDDSRK

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APPENDIX TAB 2